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Improving Reading Comprehension for Struggling Middle School Readers

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Capstone Project: Action Research

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Abstract

This action research was driven by the researcher's interest in improving struggling reading students at the middle school level through a reading intervention course. The researcher used quantitative data through FastBridge CompEfficency to monitor the nine-week reading intervention course and evaluate students' progress weekly. The areas addressed in the intervention are reading comprehension skills of paraphrasing, main idea identification, summarizing, and inferencing. The researcher is a seventh-grade teacher in her sixth year of teaching reading classes and two reading intervention courses. The findings of the research showed that a few students were able to improve their reading skills and achieve the benchmark score. However, most of the students did not improve their benchmark scores. The goal of this research was to improve instruction for struggling readers in the intervention courses by providing them with the necessary knowledge and skills to improve their reading. The findings of this research will guide the future curriculum for the classroom and reading skills addressed.

Keywords: middle school, reading comprehension, intervention, fluency, struggling readers

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Improving Reading Comprehension for Struggling Middle School Readers

Reading comprehension is the all-encompassing skill of reading that for many students is a challenge. The National Assessment of Educational Progress (NAEP) reported that the 2019 to 2022 reading scores decreased for 8th-grade students in reading scores in all areas, including lower, middle, and higher-performing students (ED, 2022). The Department of Education (ED, 2022) reported that this was one of many grades to experience a decrease in reading scores for lower, middle, and higher-performing students. The rising number of students not demonstrating proficiency in reading abilities is growing. The gap in learning will continue to grow and widen as students move into middle grades. A study in Texas found that 47% of middle school students struggle with word identification in various content areas and 84% of students also struggled with comprehension as well (Cirino et al., 2013). Researchers and individuals involved in education are seeing decreased reading skills and comprehension in middle-aged students and this gap continues to grow.

The problem is identifying the appropriate strategies and information to support these students and close the reading gap for middle school students. The purpose of this action research plan is to identify reading strategies for struggling readers that improve their reading skills and build comprehension to close the reading gap for middle school students. Students in 7th grade at the local middle school in Alton completed a reading diagnostic test through FASTBridge. With a total number of 104 students in 7th grade, 16% of students scored in the developing category, 17% of students scored in the emerging category, 50% of students scored in the proficient category, and 16% of students scored in the beyond proficient category. This action research study will support students in the emergent and developing categories of their testing through reading intervention time focusing on specific reading skills identified as troublesome.

Research for the literature review was gathered through the Department of Education (ED), Google Scholar, and DeWitt Library at Northwestern College. Scholarly journals were

sought out through Google Scholar and DeWitt Library. The Department of Education is utilized to share statewide data regarding reading scores, specifically at the middle school level. All articles collected were published within the last ten years and statistical information was from the last five years. The scope of the research was focused on articles that referenced different reading strategies and their impact on middle school students, middle school students and their learning abilities, and the impacts of multi-tiered systems of support (MTSS) for students and with a narrowed focus on middle school students finding relevant recent articles revealed some challenges.

The research articles focused on different reading strategies with specific impacts on middle school students. The strategies that were researched cover multiple essential reading components for students to understand and how explicit instruction impacts students' understanding. With this focus, students will improve their literacy skills in not only testing but for other classes. The overall goal is for students who scored in the emerging and developing categories to demonstrate growth in their reading skills through the intervention provided. The growth in the student's scores can be achieved through targeted interventions on specific reading skills using research-based practices.

The literature review is organized by the reading skills that are addressed in chronological order of how they would be introduced in the classroom daily. The literature review begins with sharing information regarding the impact of phonological and phonemic awareness on middle school students' reading understanding. The article review will include phonological and phonemic awareness, as well as sound drills and practice and decoding and encoding words. Next, the literary review addresses the strategies focusing on vocabulary and its impact on reading understanding. The review will provide strategies specifically helpful to middle school students not only to use in the intervention course but in other classes as well. Finally, the literature review concludes with reading and comprehension skills. These reviews

will provide information specific to middle school students and build their reading skills and comprehension.

Review of the Literature

Reading Gap for Middle School Students

S.K. Baker et al. (2023) conducted a mixed methods research study analyzing how the interactions of students and teachers in a reading intervention impact the results. The study was conducted in Oregon with 25 schools focusing on 8th-grade students. The schools ranged from 339 students to 1,049 students. The study took place for two years starting with end-of-the-year testing in 7th grade as the pre-assessment and beginning of a mixed methods data collection. Over the two years, three variables were addressed; interactions among teachers and students during instruction, observations of instructional quality, and observations regarding time spent on different literacy components. Along with these variables, researchers were also able to analyze the specific interventions used for students receiving the intervention and the frequency and its correlation to students' growth. S.K. Baker et al. (2023) concluded through their research that students who received reading interventions accompanied by more instructional interactions in lessons showed more growth in reading scores compared to peers who did not receive the reading intervention. Some differences were noted regarding the differences in intensity of reading intervention programs that altered the growth of students. Through research, Baker et al. (2023) found that there is a need for a multilevel modeling approach for students.

The reading gap has been identified at the middle school through Baker et al. research. Identifying students to participate in interventions can be difficult without proper measures. Nathan Stevenson (2017) conducted a quantitative study providing information regarding curriculum-based universal screenings that can be used to determine students needing intervention. In Stevenson's study, 197 students in 7th grade and 237 in 8th grade completed the screenings and then determined what intervention was needed to support their learning.

This Midwest study took two years to complete as data needed to be collected for a pre-and-post-assessment. Through the research two programs were identified as being used for intervention identification, EWS (early warning signs) and CBMs (curriculum-based measurements). The two programs working together were able to determine the students who were at risk for reading given different factors including testing scores and demographics. EWS identified students quicker in needing intervention and CBMs provided similar data but took a little longer as it was more learning and standards-based (Stevenson, 2017). Baker et al. (2023) identified the need to provide students with the academic support to succeed at the middle school level. Stevenson (2017) began the process of pre-assessment and screening to identify the students for the intervention programs. The data collected from testing is the baseline for the intervention to document students' progress through the intervention.

Closing the gap can be done in different ways, one of those ways being a response to intervention (RTI). In the RTI model, providing a secondary intervention (Tier 2) can assist in closing the reading gap for middle school students. Vaughn et al. (2010) conducted a quantitative study using 356 6th-grade students. Of those students, 241 were receiving Tier 2 instruction and 115 students were used as peer comparison data. Implementing research-based interventions for students with reading struggles targeting the specific skills of fluency, decoding, and comprehension. The students completed pre-and-post tests for baseline scores using the TAKS program. The results found that implementing these specific skills in an intervention program for identified struggling readers found increased scores in decoding and spelling skills. Mixed results about comprehension were found between the Tier 2 group and the control group. Some students showed growth in the Tier 2 group compared to the control group while others did not show growth. Vaughn et al. (2010) found that providing the necessary intervention can help students close their reading gap, however, it is only sometimes true for all students. Some factors can impact growth, which includes strategies and skills that are addressed in the intervention group.

The reading gap continues to grow for middle school students. This gap is somewhat attributed to student motivation and the strategies selected for teaching. During one school year, Ferraz (2021) conducted a quantitative study using 47 students from grades 6th -9th in Brazilian public schools. The study focused on finding a connection between self-efficacy, reading strategies, and the impact on students' reading scores. Pre-and-post-assessments were given to students to provide a baseline for comparison data accompanied with designated reading strategies, and goals specific to students. The results showed that when students set specific goals and were provided with intervention time with targeted reading strategies growth was seen in testing scores and performance in school. Reading growth is possible for middle schools when RTI Tier 2 interventions are provided with specific components. From the studies conducted thus far growth is demonstrated in many students. The factors contributing to this growth vary from study to study but remain crucial to closing the reading gap.

Impact of Phonological & Phonemic Awareness

Phonological and phonemic awareness is a skill often taught in early elementary school with a significant impact on middle school reading capabilities. Roembke et al. (2019) conducted a qualitative study with 58 middle school students from Iowa. The study addresses the phonological skills of fluency and automaticity of word recognition and their impact on middle school students' reading. Pre-and-post-assessments were administered for baseline scores with testing encompassing decoding, oral fluency, and silent fluency. Educators providing the intervention were trained in phonological and phonemic skills. Educators were taught curriculum and strategies to support students' learning as well as documentation and assessment of students' progress through the program (Roembke et al., 2019). The results from the study were unique as there was little consistency in fluency and decoding results for students in the intervention program. In a review of these results, it was determined that tracking automaticity in specific pathways is challenging, but tracking can be done through different pathways one way being through nonwords. This study determined the impact poor phonological and phonemic

skills have on middle school student's skills in fluency, decoding, and word automaticity. However, through intervention growth can be made, determining the program and monitoring is the challenge for the educator to measure students' progress accurately.

Phonological components of word identification, fluency, and vocabulary knowledge can impact middle school students' reading comprehension. Clemens et al. (2019) conducted a mixed methods study using 226 students and three teachers from two different districts in Texas to assess the impact of fluency components on comprehension. Of the 226 students, 108 were in 6th grade, 62 in 7th grade, and 56 in 8th grade. The study took two school years to be completed to measure the progress when provided with interventions in fluency skills and the effects that have on comprehension. The study began with a pre-test to assess fluency skills and comprehension skills. Three measures were used Gates-MacGinite, Group Reading Assessment and Diagnostic Evaluation, and Passage Comprehension; all assessments were used as pre-and-post tests. Observers were put into classrooms to monitor teacher and student engagement in the lessons. Teachers were provided feedback, support, and training after observations to improve instruction. Results from the study found there is little relationship between word identification, vocabulary, and students' comprehension abilities. Changes were found in students' oral reading fluency and comprehension skills to improve from the intervention. With a specific program applied to this study, results continued to remain unclear. Roembke et al. (2019) identified growth in phonics and phonemic skills, but monitoring tools were unclear. Clemens et al. (2019) study identified specific testing measures, but the results were unclear as some relationships between skills, vocabulary, and comprehension showed no connection. While oral reading fluency and comprehension increased showing a direct correlation.

Oral reading practices in the classroom can support phonics and phonemic skills for students. Brooks & Frankel (2018) conducted a qualitative study in two 9th-grade classrooms with 27 students who had been identified as needing supplemental reading instruction. Reading

instruction was provided by two teachers with a high level of education and over 10 years of experience. Data collection for the research included notes taken by the teachers, auto recording, classroom artifacts, interviews from the teacher, as well as observations from other teachers (Brooks & Frankel, 2018). The study focused specifically on how each teacher incorporated a variety of reading opportunities in the classroom for students. Oral reading, the teacher or students reading aloud, was a major point of emphasis and filled 30 to 90 minutes of class time. The findings of the study found that whole-group oral reading impacts students' engagement in the classroom and improves their reading skills.

Great Leaps Reading is a reading fluency program focusing on phonics, sight word phrases, and story passages. Lingo (2014) conducted a quantitative study with four 6th-grade students taught one-on-one by high school tutors. Students participating in the group completed daily 15-minute tutoring sessions all focused on reading fluency. Baseline scores were collected at the beginning of the study and then given to students at the end to monitor their progress. The results of the study showed all participants making growth in their fluency skills. The Great Leaps Reading program was successful in helping 6th-grade students improve their reading fluency, providing evidence for it to be a reliable curriculum option for middle school students. This research also supports how oral readings and repetitive readings improve students' fluency. Brooks & Frankel (2018) study also supported the concept of oral reading by students and teachers to improve reading fluency providing evidence for teachers to incorporate this into their classrooms. With a limited number of participants in the study conducted by Lingo (2014) it can be difficult to say if this applies to all students. The study was also taught by tutors, with no indication if this program can be implemented by one teacher in a classroom of students and have similar results.

Phonics and fluency are focused on during elementary skills but a skill that older students still need support as well. Dilgard and Hodges (2022) share about literacy centers providing middle school students the ability to improve and reinforce their phonics and

phonemic skills. Four areas of focus for middle school students to improve their skills include affixes, Greek and Latin roots, etymology, and syllabication patterns. The purpose was to support middle school students as the text complexity increases using activities that improve all areas of fluency. Activities shared include word walls, multisyllabic syllable puzzles, reader's theater, poetry, graphic novels, and audio tapes. As noted above in the studies, fluency impacts students' reading comprehension in middle school grades, and these activities shared can promote building fluency.

Morphology and Vocabulary

Morphological awareness is the concept of how words can be segmented into different parts. Students who struggle with this concept can struggle with their abilities to read. Bart-Addison and Griffin (2021) conducted a qualitative study for one year through the University of West Georgia. The researchers studied the impact of implemented structured literacy plans which have a focus on morphology and vocabulary to build students in grades 6-12 reading skills. Students specifically involved in the study were part of a reading intervention plan and had been pre-selected based on not demonstrating proficiency in reading. Bart-Addison and Griffin studied the impact using a structured literary plan had on the students and their reading skills. Through observation, teacher support, understanding of a structured literacy plan, and implementation in the classroom, readers involved in the intervention were able to improve their reading skills and demonstrate growth through the assessments. Teachers also noted that through this plan the work was simplified. Bart-Addison and Griffin noted that to continually improve structured literacy plans teachers needed to continue to stay current with reading information and curriculum options.

Morphological awareness is typically addressed in elementary school but the impact of students understanding of it is not seen until upper elementary and middle school years, as this is when text complexity increases. Robertson and Deacon (2019) conducted a quantitative study in Nova Scotia, Canada for one year determining the impact morphological awareness

has on a student as they progress through school. The study included 375 students from 1st through 4th grade in seven different elementary schools. The children were split into two groups, one younger group consisting of 197 children and one older group with 178 children. Using pre-and-post-assessment to provide baseline scores and comparison data the program was implemented with a focus on phonics and segmenting of words. The results of the study found significant changes for students in 1st and 2nd grade in their reading. This change did not stay the same for students in grades three and four. Overall, it was noted that morphological skills were significant in 1st and 2nd graders' abilities to read and were indicators of their reading abilities as they progressed through elementary school and into middle school. The impact morphological skills have on early readers is important to note as when this skill is understood their reading abilities grow, however when the skill is not fully learned difficulties can be seen. These difficulties are carried into upper elementary and middle school students.

Vocabulary knowledge is an essential reading skill for middle school students in their comprehension of complex text. A quantitative study conducted by Lawrence et al. (2019) researched the impact background knowledge and vocabulary knowledge has on middle school students' reading comprehension. Involved in the study were 12 middle schools from California involving the 6th through 8th graders. The research took three years to complete as progress was monitored to measure growth over the middle school years. The study used Gates-MacGinite as the pre-and-post-assessment regarding comprehension. In the study, students were provided reading support through different vocabulary strategies, academic vocabulary knowledge, and work with complex text. The study's results found a high correlation between academic vocabulary and reading comprehension scores. Lawrence et al. (2019), the researchers, noted that there were slight differences in academic vocabulary growth between grade levels. Bart-Addison and Griffin (2021) found that students' reading comprehension improved with morphological and vocabulary skills addressed just as Lawrence et al. (2019) researchers found through academic vocabulary.

Vocabulary development is an essential component of reading comprehension. One strategy supporting vocabulary development is the use of context clues. A quantitative study researching 44 sixth-grade students from Turkey for one year conducted by Ilter (2019) studied the effects of teaching and students using context clue strategy to improve comprehension. Using pre-and-post-assessments to provide baseline data for students and researchers to have comparison data. The teachers provided specific time each day to teach students the context clue strategy and apply it to their reading. The findings from the study showed a direct correlation between student's vocabulary knowledge and strategy use in building reading comprehension. The findings also showed the positive impact the context clue strategy has on students building vocabulary knowledge. The study was conducted with a small group and therefore cannot be fully conclusive of its effectiveness. Lawrence et al. (2019) researchers and Ilter (2019) both found similar results regarding vocabulary knowledge positively impacting reading comprehension.

Reading Comprehension Skills

Reading comprehension encompasses many different skills and strategies, for teachers it can seem overwhelming to address the many components of reading comprehension. Stevens et al. (2022) conducted a mixed methods study to address boosting middle schoolers' reading comprehension through strategies and teacher support. Involved in the study included six urban middle schools in the southwestern United States with 131 teachers and 1,952 students in grades 6th through 8th in one school year. In the study, teachers were provided professional development to address incorporating reading comprehension strategies in the classroom and how to document progress for students. Stevens et al. (2022) gathered the data from the teachers who completed the professional development but also collected data from the teachers who did not take part in the professional development. The findings of the study showed that the teachers involved with professional development had students who demonstrated more growth compared to the students whose teachers did not take part in the

professional development. Stevens et al. (2019) researchers did note that the results of the study could have been skewed as they were not observers in the classroom, so they did not know the fidelity of the data reported.

Improving reading comprehension is the goal for struggling middle school readers. Gutierrez de Blume et al. (2021) conducted a quantitative study for one school year to address exactly how to improve middle school students' reading comprehension. The study conducted in rural Georgia had 124 middle school students split into two groups and six classrooms. Three of the classrooms were intervention classrooms totaling 66 students and the other three classrooms were control classrooms with 58 students. Pre-and-post assessments were administered to all students to provide baseline scores. Through the reading intervention progress monitoring was conducted using reading inventory (RI) and GMAS Lexile (Georgia Milestones Assessment System Lexile). Literacy instruction was provided to the intervention group in all content areas using a variety of text complexities and addressing various comprehension skills including questioning, vocabulary, and higher-order thinking. The results of the study found that all the students in the intervention group that received literacy instruction in all content areas performed better in both RI assessments and GMAS scores. Stevens et al. (2019) researchers and Gutierrez de Blume et al. (2021) researchers have found similar results in providing reading interventions addressing comprehension skills and the positive impact it has on students' scores and knowledge.

Building students reading comprehension skills is possible with the proper training, curriculum, and strategies. Okkinga et al. (2018) conducted a mixed methods study to specifically identify effective reading strategies in whole classroom settings and which classroom setting is most effective in improving reading. Using 52 different studies completed from 2000 to 2018 the research group went about comparing different strategies, data, and scores. After one year of reviewing studies, the findings concluded there was a small but important effect on reading comprehension when strategies were taught in whole-class settings.

It was also noted that the different testing methods used by the various studies shared different testing results than the initial finding of having a small impact. Research-developed tests and standardized tests showed a large amount of growth in students' reading abilities. It was noted in the study that some of the studies could not be included as they did not provide enough detail in their descriptions or there was missing data which prevented having a clear picture of the impact on reading. Okkinga et al. (2018) reviewed the large amount of research that has been done on comprehension and addressing the various comprehension strategies however, no clear answer has been provided about which strategies are the most effective in improving reading comprehension. Stevens et al. (2019) and Gutierrez de Blume et al. (2021) researchers saw positive results like Okkinga et al. (2018) but the strategies taught to students to improve their reading skills have not been consistent.

Main idea identification and summarizing are two reading comprehension identified as important skills for students. Shelton & Lemons (2021) conducted a qualitative study using multiple teachers implementing these two strategies in their middle school classrooms and the impact it has on students' overall reading comprehension. The study focused on the effectiveness of the main idea identification and summarization using two programs, CALI (Content Area Literacy Instruction) and Get the Gist/Associate Gist. Observations were collected from focus groups comprised of the teachers teaching these programs met and conversations were documented. The findings from the meetings and observations identified that the main idea strategy is an essential skill but a challenging one. For students with reading struggles and learning disabilities, the strategy was even more challenging for them to understand. The programs used in the classroom were noted to provide very explicit instruction and modeling to help not only teachers teach the skill, but also provide students with multiple ways of interacting with the strategy. Teachers also commented on how this strategy could be applicable in all content areas to help students improve this skill. Shelton & Lemons (2021)

provided the study regarding the teachers and their interactions with the study. However, without student data, we are not able to see the impact it has on students' test scores.

Main Idea and summarizing are not the only comprehension skills, questioning is another important one. Stevens et al. (2020) conducted a mixed methods study using 7th-grade teachers in science and history to study the impact question generation has on reading comprehension. The researchers provided the teachers with professional development in helping integrate their strategy into their classrooms. The teachers were taught what the strategy was, provided specific examples of how it would fit into their classrooms and curriculum, assistance in creating materials, collaboration, and feedback from professionals. The results of the study found the teachers were eager to implement this strategy in their classrooms because, after the training they saw the impact, it would have on the student's understanding of the text. Teachers were provided adequate support to have the confidence to incorporate this into their classrooms. The findings for the students showed the strategy did improve comprehension for some students, but not all which Stevens et al. (2020) researchers noted that this is not uncommon. Shelton & Lemons (2021) and Stevens et al. (2020) both shared three effective reading comprehension strategies that can positively impact students' comprehension skills in not only reading classrooms but all content areas.

Critical visual reading skills are another comprehension tool used to support student's understanding of text. Batur et al. (2019) conducted qualitative research in Turkey for one year. In his research, 20 teachers and 200 students in grades 5th – 6th completed various tasks centered around visual reading skills. Throughout the research, students were presented with images and asked to respond to the images orally and through written responses. The documentation of this study included observation, journaling, recording, and student artifacts. Through Batur et al. (2019) research it was found that describing visual objects is an essential skill that impacts visual literacy and basic reading skills. The study also found that male students were able to describe with greater detail the objects compared to female students. Female

students' comments centralized on themes the images correlated with providing a more

analytical view of the images. This reading strategy is another tool for students to support their

reading comprehension skills. This skill has not been mentioned by previous research studies

but has effectiveness in student's overall understanding.

      The wide variety of reading skills can be challenging to implement for a struggling reader

as it can be unclear as to which strategy would be most beneficial to them. Huang (2019)

conducted a qualitative research study for one year that addressed the relationship between

verbal, visual, and interaction components multimodal framework for reading. The focus was on

helping educators understand the importance of teaching literacy strategies from a critical

viewpoint. Huang's (2019) research found the importance of the framework and the positive

impact it has on classroom learning. Many teachers and educators appreciate this tool and what

it has to offer for learners. Future research regarding the critical multimodal framework was

implemented in the classroom and collected results thus providing evidence of its effectiveness.

Currently, the only evidence from this study is from educators' responses and observations

conducted by the researcher. This tool, like the others listed above, is another option for

educators to implement into a class to support struggling readers.

Methodology

Setting and Participants

The study was conducted at a 6th through 8th middle school in a small rural community school in Northwest Iowa. The socioeconomic level of the area is middle-class with most of the community in this category. There are 1,489 students in the district and 329 students in the middle school. The school is considered more middle-class socioeconomic level with 25.5% of the students identified as having low socioeconomic status. The study body is 50.5% male and 49.5% female. Of those same students 72.6% are white, 21% Hispanic, 3% multi-racial, 1.5% Black/African American, 1.2% Asian, and 0.3% Native American and Hawaiian/Pacific Islander. In the middle school, 15.5% of students have been identified as having a learning impairment and are on an individualized education plan (IEP). There is also 6.1% of the student body as English learners (EL).

The students involved in the reading intervention were selected from this group of students. There are some challenges in selecting participants for the study, one being the access and availability of students. To be part of the intervention program students needed to meet the following criteria, if they did not, they would not assist in answering the research questions:

- Students did not achieve grade level proficiency on FAST aReading or autoReading assessment from the last two assessment times.
- Students who are already part of a different MTSS program can still receive this additional intervention support. Other MTSS programs include special education or English language services.
- The student did not pass the reading portion of the ELA test on the Iowa Statewide Assessment of Student Progress (ISASP).

With these criteria, the study is considered a purposive sample as the participants are chosen

for a specific reason and purpose. There are 21 students in this research study, 8 females and

13 males. Four students receive special education services and two receive EL services.

Variables

The question explored through action research focuses on improving reading skills in

middle schools.

- How to improve struggling readers' test scores through a reading intervention program?

- How effective are reading comprehension strategies in improving struggling middle

  school readers' reading skills?

The independent variable for this research includes the strategies and curriculum used

in the intervention program. Time and meeting frequency for the intervention program are

additional independent variables. Data collection from the independent variable will be done

through FAST (Formative Assessment System for Teachers). This assessment is completed

three times a school year. FAST testing is made of two tests, autoReading and aReading. The

autoReading section of the test consists of fluency and decoding reading skills. The aReading

portion of the test is comprehension and adaptive reading skills. As the school year progresses

the defined score for each test increases to simulate the learning growth made throughout a

school year.

The dependent variable includes the results of the students participating in the reading

intervention course. The data is collected through FAST during the three times, or every three

months, assessment and for the weekly progress monitoring. The three times of year testing

include autoReading and aReading. The scores for these assessments grow to replicate the

growth students should make in their learning. The weekly progress monitoring is aReading.

The goal score for progress monitoring is proficiency or 80%. Students involved in the reading

intervention and completing progress monitoring meet every other day for a 40-minute class. In

the class, a variety of reading strategies and skills are used to improve reading abilities,

including identifying the main idea, essential details, vocabulary, inferencing, and paraphrasing.

The timeline for the intervention is three months to use the FAST assessment given three times

a year as a baseline score.

Additional variables that are considered include the students, the classroom, the

teacher, and the school. The student variables include gender, race, socioeconomic status,

learning styles, learning impairments, and native language. The classroom variables include the

number of students, pacing, and routines. The teacher variables include content knowledge,

understanding of the students, and educational goals for the students. The school variables to

consider are the demographics of the students and the learning priorities of the students and

their families.

Data Collection

Following the criteria for the reading intervention students were selected. The students

are part of the intervention for three months. The students meet every other day for a 40-minute

class focusing on various reading skills. Throughout the intervention, students complete weekly

progress monitoring through FAST. "FastBridge's valid and reliable assessments help educators

identify students' academic and social-emotional behavior (SEB) needs faster, align the right

interventions at the right time, and measure whether interventions are helping students catch up

- all in one platform and in up to half the test time" (Fast, 2022, n.p.). Using this tool for the pre-

and-post assessments and weekly progress monitoring is an efficient way to assess and collect

data. Scores are recorded in a spreadsheet only accessible to specific educators through the

school's private network. Students also receive their scores and record them on their charts,

and their charts are kept in their files.

After the three-month intervention data will be analyzed by comparing pre-and-post-assessments. The mean and standard deviation will be collected for each student to analyze their growth and overall, how the group improved.

IRB Exemption

Federal policy 46.104 shares the qualifications for exempt research. "Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn…" (Electronic Code of Federal Regulation, 2018, n.p.). The research conducted is taking place in the general education classroom. Students are not put in danger regarding their learning. Practices used in the classroom are research-based. Students are safe in their learning in the intervention program. "Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement)" ... (Electronic Code of Federal Regulation, 2018, n.p.). The testing conducted in the intervention is used for determining placement in the intervention program. The testing tools used are state-regulated and deemed appropriate for collection, monitoring, and sharing with educators and parents. This research study is exempted given the IRB policy.

Findings

Data Analysis

A dependent samples t-test was conducted to determine the changes from students'

pretest to posttest when provided a reading intervention to improve skills. The pretests revealed

the need for students to be involved with an intervention to improve reading skills. The average

score was 516 with a proficient score of 526 (M - 516, SD - 11.99) for a grade-level

comprehension test. Students were then involved with a 9-week intervention course focusing on

various reading skills including paraphrasing, summarizing, identifying the main idea,

vocabulary, and fluency. After completion of the 9-week intervention course, the post-test was

administered to students again. The average score was 515.71 with a proficient score of 531 (M

- 515.71, SD - 16.96) for a grade-level comprehension test. The dependent samples' two-tailed

t-test results show a difference between pre-and-posttests, t(20) =.062, p < .951. With the result

being a positive number just under one, it shows the close results of the tests. Regarding the

scaled score for proficiency at each benchmark test, it is noted that the average scores from the

pre-test to the post-test dropped. The t-test results are provided below.

Figure 1

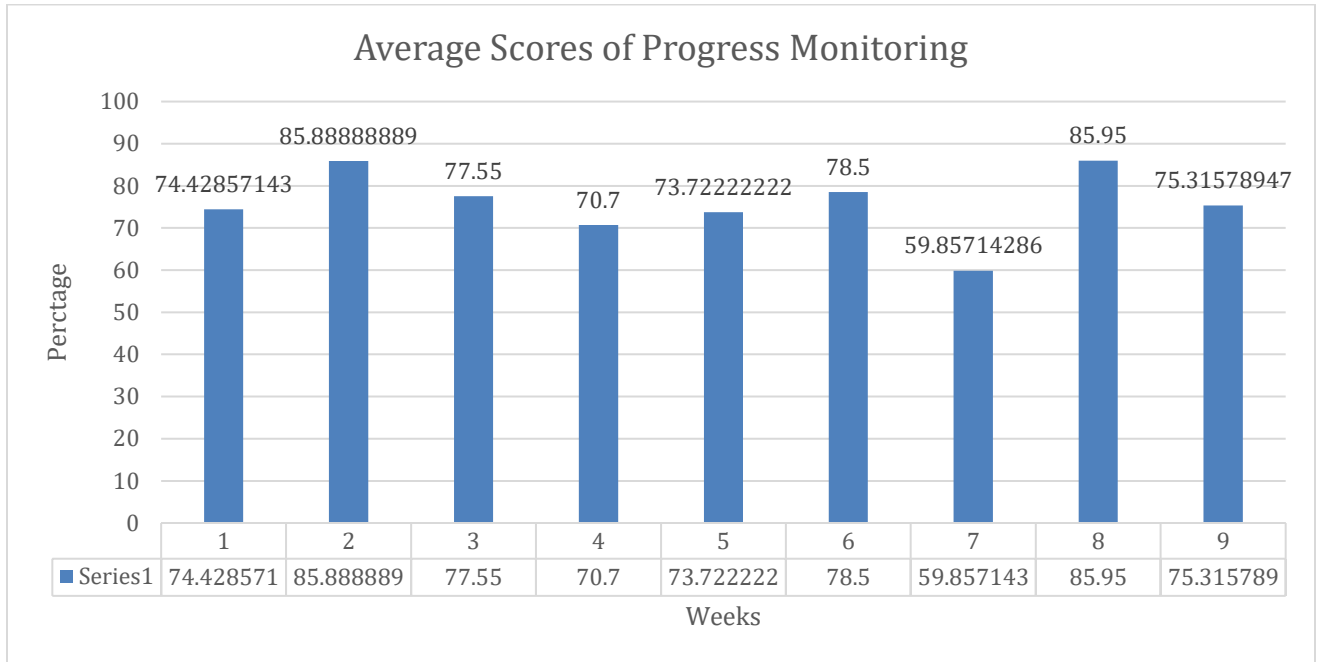|	*Variable 1*	*Variable 2*
Mean	516	515.7142857
Variance	143.7	287.7142857
Observations	21	21
Pearson Correlation	-0.03467209	
Hypothesized Mean Difference	0	
df	20	
t Stat	0.062031286	
P(T<=t) one-tail	0.475576828	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.951153655	
t Critical two-tail	2.085963447	

The intervention improved some students' scores, however, the mean decreased from the pre-test to the post-test and demonstrated the closeness in scores from the pretest to the post-test. A graph of the pre-and-post-test scores is provided broken down by each student, which is listed at the bottom. Pre-test scores are in blue and post-test scores are in orange. These scores show specifically how each student did on their test compared to their previous score and compared to their peers.

Figure 2
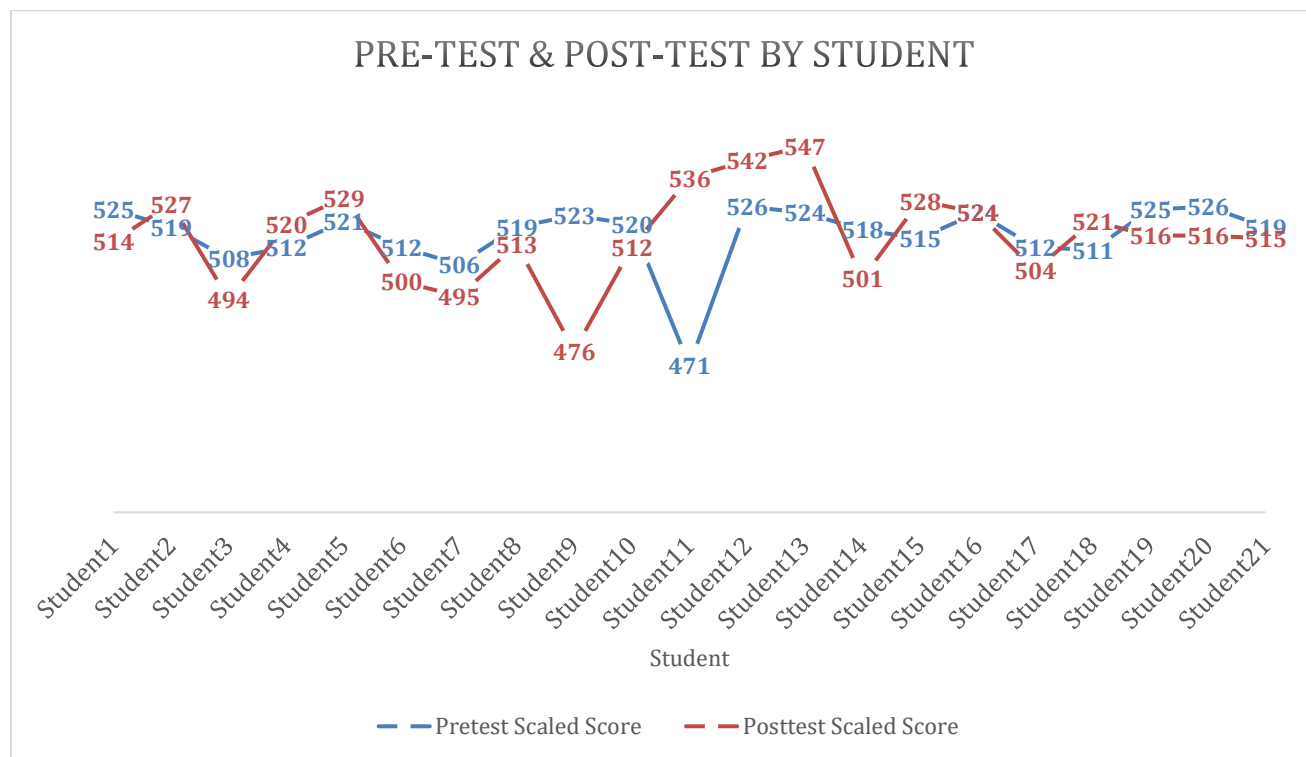
Students completed weekly progress monitoring through the course of the intervention to monitor learning and make necessary adjustments to ensure students' understanding. Weekly progress monitoring was tested at the grade level and alternated between narrative and informational text. Progress monitoring score averages were found for each of the weeks and assisted in predicting student success for the post-test.

Figure 3

Average Scores of Progress Monitoring

Weeks	1	2	3	4	5	6	7	8	9
Series1	74.428571	85.888889	77.55	70.7	73.722222	78.5	59.857143	85.95	75.315789

The data collected showed a need for an intervention program for students who scored below proficiency. However, with the decreased score from the pretest to the post-test, the curriculum and materials used may not be sufficient to support all students. Progress monitoring showed proficient scores, 80% or higher were achievable for students, but not consistently. Given the results of the research, additional material may need to be sought out to encompass more components of reading to improve students' scores. The interventions need to continue to support struggling readers and the research demonstrated that it supported some readers, but not a majority. As a team of educators, it would be vital for struggling readers to reflect, research, and make changes to current programs to support struggling readers' reading capabilities.

Discussion

Summary of Major Findings

One of the research questions is: How effective are reading comprehension strategies in improving struggling middle school readers' reading skills? The average score on the pre-test was 516 and the average score on the post-test was 515.71. With the decreasing numbers from the pre-test to post-test it can be determined that reading comprehension strategies alone didn't improve struggling readers' reading skills. The standard deviation for the pre-test and post-test shows that there is a great difference between students' scores and the average score providing a wide range of data. This wide range of data tells educators that students involved in the intervention program are coming in with various levels in their reading skills.

While the average scores show a decrease when viewing each student this did not apply to all. Students 2, 4, 5, 11, 12, 13, 15, and 18 all had scores from pre-test to post-test increase. This information provides evidence that the reading comprehension strategies used do improve struggling middle school readers' reading skills. However, the remaining students' scores either decreased or remained the same from the pre-test to the post-test. Thus, providing reasoning that the specific reading strategies addressed in the reading intervention were not substantial enough to improve struggling readers' reading skills.

Viewing students' weekly progress monitoring scores provided ongoing data regarding student's progress in the intervention. The average scores typically fell within the 70-85% range with one outlier of 59%. These scores demonstrated that some skills were understood as testing scores were at a proficient level, 80% or higher. However, for most of the weeks, the scores were below that of proficiency.

The second research question is: How to improve struggling readers' test scores through a reading intervention program? Reviewing the data from the intervention the strategies used through the intervention did not improve all struggling readers' test scores. Eight students improved from pre-test to post-test, but 13 students did not. The strategies used would need to

be reevaluated for their effectiveness and additional strategies sought out to improve students'

reading skills.

Impact on the Classroom

Using the research, the next step would be adjusting in the classroom. If no change is

made in the classroom regarding instruction and curriculum, the research process comes to an

end. However, adjusting and beginning the process again allows for improvements to be made

for the teacher and students. Viewing the data, the first adjustment in the classroom would be

adding in additional reading skills and strategies to implement. With reading being split between

two areas of fluency and comprehension it would be beneficial for students to have skills that

support both areas. A second adjustment in the classroom would be analyzing if the progress

monitoring tool that monitors learning through the intervention is the most effective. If this tool is

not effective, then the information learned through the weekly check-ins is not supporting the

teacher in adjusting the learning based on the progress monitoring assessment.

Limitations of the Research

One of the limitations of this study is the number of students involved. With only 21

students the data pool is smaller and thus not creating a well-supported argument to the

effectiveness of the strategies. A second limitation is the specific reading strategies addressed

in the intervention. With many reading strategies identifying specific ones to teach students to

improve their reading skills is difficult to pinpoint. The strategies selected for the intervention

may not have worked for this group however, it doesn't mean they would not work for another

group of students. A third limitation of this study is the progress monitoring tool used. This tool is

made up of eight passages, a combination of narrative and informative. However, these

passages are recycled from year to year and for some students, they could have been repeated

passages.

When viewing data, it's also important to consider that the data represents a student.

The data doesn't tell the child's full story and capabilities. The variances in scores could be

more than just limited growth in reading skills, there could be personal battles at home and emotional ones that cannot be accounted for in the data.

Future Research

An option for additional research would be to implement additional reading skills and strategies that support the fluency component of reading. The current research focused on comprehension skills, but the literature reviews presented the need to encompass the fluency components of reading. This would provide another reading component that can support student's reading abilities that was not addressed in the previous study. It would be more beneficial to address both components of reading to ensure that all areas of reading for the students are being met. This additional area being addressed in the intervention provides an all-encompassing reading program supporting all reading skills compared to just comprehension skills.

A second option for further research would be to look to involve more grade levels and students. The current study used 21 students from 7th grade but incorporating 6th and 8th grades would provide additional evidence regarding the research and its effectiveness. It would also increase the number of participants in the study. These additional grade levels and students would provide the information to see if the progression of reading skills is improving for middle school students from one grade level to another.

A third option for future research would be monitoring the effects of the intervention on the student's academic success in high school. If these interventions are effective, success should be seen in the student's future academics as well. There is limited research regarding reading interventions and strategies at the middle school level, therefore the future research conducted would be beneficial to numerous educators. There is even less research out there regarding the long-term effects of reading interventions on students' academic success beyond middle school.

Conclusion

Struggling readers deal with struggles beyond the reading classroom, as reading is a skill necessary in many classrooms. As children progress through school and those struggles are not being supported, frustration builds, and confidence drops. Middle school struggling readers can be supported to build their reading skills and confidence. Even with the limited research regarding reading interventions at the secondary level, the data supports that students can learn these skills and build their reading capabilities. The main problem educators encounter when supporting reading struggle is identifying the specific strategies and skills to address with students. It's hard to pinpoint one skill to work on, as this skill may not be helpful for all students. As educators, it is our responsibility to ensure that we provide struggling readers with a variety of strategies and tools to ensure they can build their reading understanding. The overall data showed a decline from the pre-test to the post-test. However, when analyzing the data student by student it can be concluded that some of the students benefited from the specific strategies taught. Moving forward and learning from this research, it would be important to address the reading strategies and skills taught in the intervention program and their effectiveness in supporting student learning. The data has provided evidence that the strategies addressed did not support all student learning and additional strategies may need to be taught as well. As educators and researchers view this research reading interventions do support students' needs and learning. However, determining the specific reading skills and strategies needed to be taught is not clear as each student is going to be receptive to different strategies. Creating an intervention program encompassing a variety of strategies would be most beneficial to students' learning.

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